

OFFICE OF THE SECRETARY OF DEFENSE

February 11, 1991

MEMO FOR Mr. Ron Knecht
Ms. Diane Fountaine
Ms. Cindy Kendall

Attached is an advance copy of the Report to Congress on Medical Architecture that OSD(HA) prepared, in response to a report requirement specified in (HR-101-938). As we discussed the other day in your office (see attached MFR), we felt the Report to Congress should be forwarded under joint signatures by ASD(HA) as the functional responsible office, and ASD(C3I) as the Senior IRM Official. I discussed this with OSD(HA), and they agreed. The formal correspondence to accompany the Medical Architecture Report reflects this agreement.

In the interest of time, since the deadline for submission is February 1, 1991, I requested an advance copy of the document so that we may do an advance review. I plan to ask Bill Leary, Harry Pontius, and Tom Bozek to coordinate on this document internally in parallel with OSD(HA)'s start of the formal coordination process with the Comptroller's office and OSD(LA). After HA receives the formal coordination from those two offices, the formal document will be forwarded for Mr. Andrew's signature.

Belkis Leong-Hong

R&C William T. 2/14
R&A HE Pontius 2/12
P&S TB 2/12

*Probably meet Congress
needs but
not really an
architecture project.*



COMMAND, CONTROL,
COMMUNICATIONS
AND INTELLIGENCE
(Information
Systems)

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON, DC 20301-3040

JAN 28 1991

MEMORANDUM FOR RECORD

SUBJECT: Medical ADP Architecture - Report to Congress

At a meeting 24 January 1991 among Mr. Ronald Knecht, Special Assistant to ASD(C3I); Ms. Cynthia Kendall, DASD(IS); Ms. Belkis Leong-Hong, Director, CIM; Dr. Michael Mestrovich, Leader, CIM Medical Functional Group; and Mr. Vance Kauzlarich, Deputy, CIM Medical Functional Group, to discuss potential medical standard systems and improved business practice projects, the subject of the Congressionally requested Medical ADP Architecture was discussed as an aside.

The Conference Committee Report (101-938) on Making Appropriations for the DoD for FY91 stated: "The conferees reiterate their request for a medical ADP architecture (plan) for the medical ADP modernization projects currently underway by February 1, 1991, and direct DoD to coordinate this plan through the CIM medical working group."

OASD(HA) has drafted a report titled "Medical ADP Architecture, Report to Congress" in response to this congressional request and informally provided it to the CIM Medical Functional Group.

The congressional intent in the language "coordinate this plan through the CIM medical working group" would appear to be focused upon insuring that the CIM program is aware of and blesses the medical community's ADP program. Though the CIM medical working group can review and validate the report from the medical perspective (i.e., the work of the group), only the DoD Senior IRM Official can officially validate its proper fit with Department CIM goals, objectives and plans. It therefore makes sense for the Senior IRM Official to approve the report prior to its release to congress or co-sign the report with ASD(HA).

The attendees at the meeting agreed that a co-signed report appeared to be the appropriate solution. Ms. Leong-Hong took the action to discuss this with Dr. Mendez, ASD(HA).

C. Vance Kauzlarich
Deputy, CIM Medical Functional Group

MAKING APPROPRIATIONS FOR THE DEPARTMENT OF DEFENSE

OCTOBER 24, 1990.—Ordered to be printed

Mr. MURTHA, from the Committee of Conference,
submitted the following

CONFERENCE REPORT

[To accompany H.R. 5803]

The Committee of Conference on the disagreeing votes of the two Houses on the amendments of the Senate to the bill (H.R. 5803) "making appropriations for the Department of Defense for the fiscal year ending September 30, 1991, and for other purposes," having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its amendments numbered 13, 18, 24, 26, 35, 41, 53, 64, 66, 67, 68, 71, 74, 77, 78, 86, 97, 101, 103, 104, 105, 106, 109, 110, 112, 113, 117, 119, 120, 121, 124, 125, 126, 139, 140, 143, 145, 149, 151, 152, 156, 161, 165, 167, 169, 171, 173, 176, 180, 181, 182, 183, 184, 186, 187, 188, 189, 192, 193, 194, 195, 196, 197, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 221, 225, 227, 229, 232, 237, 241, 244, 245, 246, 248, 250, 252, 254, 256, 261, 265, 268, 270, 272, 273, 275, 277, 283, 287, 294, 298, 304, 306, 308, 310, 313, 315, 317, 318, 334, 337, and 361.

That the House recede from its disagreement to the amendments of the Senate numbered 20, 28, 36, 38, 39, 40, 42, 44, 45, 47, 49, 51, 56, 57, 60, 63, 69, 72, 82, 84, 88, 91, 92, 93, 96, 98, 111, 116, 127, 134, 135, 136, 144, 146, 147, 148, 150, 153, 155, 157, 158, 159, 160, 162, 163, 164, 166, 168, 170, 172, 174, 175, 177, 185, 190, 191, 198, 199, 200, 223, 234, 235, 236, 243, 263, 279, 280, 289, 290, 291, 292, 295, 296, 297, 299, 300, 320, 339, and agree to the same.

Amendment numbered 1:

That the House recede from its disagreement to the amendment of the Senate numbered 1, and agree to the same with an amendment, as follows:

and operate full scale facilities at selected waste sites to effect the treatment of these wastes and eliminate the continuing costly storage.

HUMANITARIAN ASSISTANCE

Amendment No. 41: Appropriates \$15,000,000 as proposed by the House instead of \$13,000,000 as proposed by the Senate.

Amendment No. 42: Deletes House language making a portion of the appropriation subject to authorization.

AUTOMATED DATA PROCESSING RESOURCES

The conferees agree to the following funding adjustments:

Program	O&M	Procurement	Total
ARMY			
CIM reduction.....	-542,070		-542,070
Computer Maintenance.....	-20,000		-20,000
Army Guard.....	4,241		4,241
Army Reserve.....	-4,241		-4,241
Worldwide Military Command and Control System.....		-5,000	-5,000
Automated Data Processing Equipment (P-1 line 110):			
AMC Info. Processing Eqpt.....		-5,468	-5,468
Financial Mgmt. Automation.....		-9,104	-9,104
EUCOM/PACOM ADP.....		-4,000	-4,000
CALS Info. Processing Eqpt.....		-2,810	-2,810
Subtotal.....		-21,382	-21,382
Total Reduction, Army.....	-562,070	-26,382	-588,452
NAVY			
CIM reduction.....	-287,373		-287,373
Computer Maintenance.....	-25,000		-25,000
Industrial/Depot Maintenance Equipment (P-1 line 295):			
MIS for Air Engineering Centers.....		-6,409	-6,409
Military Sealift Command ADP.....		-1,033	-1,033
Engineering Data Management Information & Control System.....		-16,453	-16,453
Supervisor's Desk.....		-4,330	-4,330
Subtotal.....		-28,225	-28,225
Computer Acquisition Program (P-1 line 296):			
Stock Point ADP Replacement.....		-11,623	-11,623
Inventory Control Point Resolicitation.....		14,549	14,549
Navy Standard Technical Information System.....		-2,734	-2,734
Central Processing & Distribution.....		-1,112	-1,112
Navy Occupational Health Info. Mgmt. System.....		-1,443	-1,443
Triservice Micropharmacy & Food Service System.....		-505	-505
CAD/CAM.....		-2,500	-2,500
Station Information Mgmt. System.....		-5,322	-5,322
Central Processing Unit-II.....		-2,400	-2,400
Worldwide Military Command & Control System.....		-1,703	-1,703
Subtotal.....		-43,918	-43,918
Total Reduction, Navy.....	-312,373	-72,143	-384,516
AIR FORCE			
CIM reduction.....	-427,182		-427,182
CALS.....	-20,000		-20,000
Automated Data Processing Equipment (P-1 line 136):			
Personal Concept-III.....		-29,106	-29,106
Requirements Data Bank.....		-2,946	-2,946
Clinical and Diagnostic Systems.....		-1,085	-1,085
Subtotal.....		-33,136	-33,136
Worldwide Military Command and Control System.....		-8,357	-8,357

Program	O&M	Procurement	Total
Military Airlift Command Command and Control Sys.....		-7,000	-7,000
Base Level Data Automation.....		-10,852	-10,852
Asset Capitalization Program Depot Maintenance Management Information System.....		-37,000	-37,000
Total Reduction, Air Force.....	-407,182	-96,345	-503,527
DOD agencies			
CIM reduction.....	-118,336		-118,336
DLA Computer Maint.....	-4,000		-4,000
Mechanized Material Handling Systems.....		-4,000	-4,000
Worldwide Military Command & Control System.....		-2,602	-2,602
Automated Data Processing Equipment (P-1 line 17):			
Standard Automated Material:			
Management System.....			
Immediate Improvement.....		-14,000	-14,000
Initiative.....		-6,500	-6,500
Cataloging Tool On-Line.....		-13,275	-13,275
Engineering Data Management Information and Control System.....			
Subtotal.....		-33,775	-33,775
Total Reduction, Defense Agencies.....	-122,336	-40,377	-162,713
CIM General Provision.....	-1,000,000		-1,000,000
CIM, Defense Agencies.....		-22,963	-22,963
Total reduction.....	-403,961	-212,284	-616,245

Corporate Information Management.—The conferees strongly endorse the Corporate Information Management (CIM) Initiative, a constructive effort undertaken by the Department of Defense to ensure the standardization, quality, and consistency of data from DOD's multiple administrative management information systems.

The conferees therefore agree to the Senate's approach for financing the CIM initiative. The conference agreement centralizes management of development, modernization, and procurement funds for CIM-related automated information systems in the Office of the Secretary of Defense (OSD) CIM program office. It also provides \$1,000,000,000 of development and modernization operation and maintenance funding to the Secretary of Defense, and moves procurement funding for service proposed systems to the central CIM funding line in Procurement, Defense Agencies. While the overall service level of funding for automated data processing operation and maintenance and procurement has been reduced, the conferees emphasize that no specific service information system program has been terminated by this action.

The conferees agree that the DOD senior information resources management official shall allocate funding to individual automated information systems which meet or exceed the criteria established by the Comptroller for standard information systems and further the objectives of the CIM initiative. The conferees are aware that several current systems, among them, the Depot Maintenance Management Information System (DMMIS), Requirements Data Bank (RDB), and Cataloging Tool On-Line (CTOL) may be candidates for CIM funding. The conferees strongly urge the DOD senior information resources management official to expeditiously choose interim standard systems and allocate funds to minimize the impact of the transfer upon existing contractual obligations. The conferees direct DOD's senior information resources management

official to submit a report to the Appropriations Committees of Congress by March 1, 1991 on the status and progress of the CIM initiative, to include program milestones, return-on-investment objectives, dates for selection of interim standard systems in each functional area, and anticipated investment costs associated with the development of interim standard systems or the integration of existing systems with the interim standard architecture. The conferees direct the services and defense agencies to submit future budget requests for medical, material management, logistics, and other CIM-related systems through the CIM program director for coordination and review.

Computer-aided Acquisition and Logistics Support Program.—The conferees fully support the Defense Department's computer-aided acquisition and logistics support (CALS) program and encourage the Department to accelerate its efforts to standardize technical data. The conferees agree to the Senate's transfer of funds requested by the services for CALS-related systems to the central CIM funding line in Procurement, Defense Agencies. The conference agreement also directs the services and defense agencies to submit future funding requests for CALS-related systems through the OSD CALS coordinator. The Office of the Secretary of Defense (OSD) requested \$95,000,000 in fiscal year 1991 to accelerate Navy initiatives to improve the development, maintenance, and dissemination of logistics, engineering, and design data. The conferees note that the justification provided by OSD for these funds does not adequately support the request to accelerate these projects, and therefore, within the CIM procurement funding line, the availability of the \$95,000,000 provided in fiscal year 1991 for CALS programs is not restricted to funding of Navy projects. Before obligating any of these funds, the conferees direct OSD to review Army, Navy, Air Force, and defense agency CALS projects and programs to determine which projects and systems will be selected as CALS standards. The conferees direct OSD to notify the Committees on Appropriations and Armed Services of the results of the review, and provide the Committees with a revised acquisition plan for CALS that addresses the termination of duplicative CALS programs.

Medical automated information systems.—The conferees agree with the Senate's transfer of service medical system funding to the Office of the Secretary of Defense. The conference agreement transfers funding for the Navy's Central Processing and Distribution system, Occupational Health Information Management System, and Tri-service micropharmacy and food service systems from the Navy's computer acquisition program to the Corporate Information Management (CIM) funding line in Procurement, Defense Agencies. It also transfers funding for the Air Force Clinical and Diagnostic System from the Air Force automated data processing (ADP) equipment funding line to the CIM funding line. The conferees reiterate their request for a medical ADP architecture (plan) for the medical ADP modernization projects currently underway by February 1, 1991, and direct DOD to coordinate this plan through the CIM medical working group.

Logistics ADP Master Plan.—The conferees agree with the House language which required the Assistant Secretary of Defense for Production and Logistics to submit a master plan for DOD logistics

computer modernization programs currently underway by February 1, 1991.

Computer Maintenance.—The conferees agree to the House reductions to ADP operation and maintenance funds for unnecessary growth in computer maintenance costs. Of the reductions listed in the automated data processing table, \$20,000,000 in the Army, \$25,000,000 in the Navy, and \$4,000,000 in the Defense Logistics Agency are to be applied to computer maintenance costs.

Army Reductions.—The conference agreement includes the following reductions to Army ADP procurement funds: \$5,468,000 from the Army Materiel Command due to lack of justification; \$2,810,000 from the Army Materiel Command digital storage and retrieval engineering data system has been transferred to the CIM funding line; \$4,000,000 has been reduced from EUROM/PACOM ADP for anticipated force structure reductions; and funds for the Army Finance Center financial management automation project have been denied pending the outcome of DOD consolidation of the services' finance centers.

Navy Reductions.—(1) Industrial/Depot Maintenance Equipment: The conferees agree with the Senate's reductions to ADP funding in the industrial/depot maintenance account. However, the conferees have agreed to provide funding for the Navy regional data automation centers. (2) Computer Acquisition Program: The conferees agree to Senate reductions to the Navy Stock Point ADP Replacement, Inventory Control Point Resolicitation, Navy Standard Technical Information System, Central Processing and Distribution System, Occupational Health Information Management System, Tri-service micropharmacy and food service systems, and the Station Information Management System. The conferees also accepted the House reductions to CAD/CAM and the Central Processing Unit-II program. The conferees direct the Navy to separate the WWMCCS program from the computer acquisition program, and display the WWMCCS funding in a separate P-1 line in future budget requests to the Congress.

RESCOMMIS.—The conferees do not agree with the House proposed language to deny funds for expansion of the system. However, the DOD senior information resources management official should certify to the Appropriation Committees of Congress by February 1, 1991 that the RESCOMMIS acquisition strategy is cost-effective and meets CIM objectives.

Air Force Reductions.—The conferees accepted the Senate's reductions of the Clinical and Diagnostic system, Requirements Data Bank, and Personnel Concept III (PC-III). The conferees agree that further deployment of PC-III should be postponed pending the selection of a standard personnel management information system.

Military Airlift Command, Command and Control System.—The conference agreement reduces the Air Force request for information processing equipment for the MAC command and control system. The conferees note that software development problems have resulted in a schedule slip and increased development risk to the government. The conferees direct the Air Force to present this program to the Major Automated Information System Review Committee (MAISRC) for review as an item of special interest in fiscal year 1991.



OFFICE OF THE SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

Honorable Daniel K. Inouye
Chairman, Subcommittee on Defense
Appropriations
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

The attached report is in response to the Fiscal Year 1991 Defense Appropriations Act Conference Report requesting a medical automated data processing architecture plan for the military health care system.

This report provides an update to the 1989 Medical Architecture Report to Congress and addresses the Department's implementation of the Corporate Information Management (CIM) program, the transition of medical ADP architecture initiatives to that program, and a projected timeframe for the production of an information systems migration plan.

Thank you for your ongoing support of the military health care system.

Sincerely,

Enrique Mendez, Jr., M.D.
Assistant Secretary of Defense
(Health Affairs)

Duane P. Andrews
Assistant Secretary of Defense
(Command, Control, Communications,
and Intelligence)

CC: Honorable Ted Stevens
Ranking Republican

MEDICAL ADP ARCHITECTURE
REPORT TO CONGRESS

February 1, 1991

I. Introduction

Efficient and effective management of information resources within the Military Health Services System (MHSS) is essential in fulfillment of its mission of ensuring support to combat-ready active duty fighting forces and providing quality health care to those forces and their beneficiaries in peacetime and in wartime. A strategic business plan and an effective information systems planning process which identifies and prioritizes functional requirements is the key to ensuring that the missions of the MHSS are fulfilled. Management of the information resources supporting the strategic goals of the organization requires an appropriate infrastructure to provide policies, standards, guidelines and organization infrastructure to achieve standardization and interoperability of automated information systems (AISs) within the MHSS. The MHSS information systems architecture program in conjunction with the DoD Corporate Information Management (CIM) initiative provides the framework for achievement of these goals. As prescribed by the CIM process, a medical architecture is defined as a strategic information systems plan, derived from a mapping of future functional and information requirements (represented in the form of data and process models) against a comparable representation of extant automated capabilities, for the purposes of identifying unmet requirements and existing system overlaps. A strategic plan is then be developed to migrate the installed base of systems to an integrated architecturally-driven environment.

This report describes the efforts of the Office of the ASD(HA) in conjunction with the Services and the CIM organization to develop such a plan.

II. Background

Department of Defense Directive (DoDD) 5136.1, entitled "The Assistant Secretary of Defense (Health Affairs)," states the responsibilities, functions, relationships and authorities of the ASD(HA). Among the functional areas of responsibility identified are those of medical information systems. On July 31, 1984, ASD(HA) commissioned an information systems task force to conduct a comprehensive review of the DoD medical information systems. In the "Report of the ASD(HA) Task Force on Systems Integration," dated April 9, 1985, numerous inadequacies within the MHSS information system program were identified. These included an absence of policy and planning processes; a lack of organizational cohesion; inadequate data comparability; deficient manpower resources; a lack of concern for information quality assurance; an absence of coordination and the perpetuation of independent systems design and development across the MHSS.

The task force recommended that specific actions be taken by the ASD(HA) to address these findings. Among the recommendations were explicit MHSS information policies and plans; consistent MHSS information systems architecture; management of MHSS information systems as a resource; and establishment of an OASD(HA) capability to support users by creation of one entity for the management of information and information systems.

In February, 1986, DoDD 5136.10 established the Defense Medical Support Activity (DMSA) for the development, maintenance and oversight of the enhancement and operation of information systems and communications in support of the Military Health Services System. DoD Instruction 6000.9 established the Health Services System Information Resource Management Program in October 1986, for the purpose of providing guidelines, operational policies and procedures for the design, development, and operation of automated information systems supporting MHSS; the provision of operational guidance concerning that architecture; and the monitoring of Health Services information systems to comply with approved policies. The Defense Medical Systems Support Center (DMSSC) was established within DMSA to implement the health services system information resource management program.

On July 11, 1988, Deputy Secretary of Defense Taft issued a memorandum entitled "Automated Information Systems (AISs) Standardization and Interoperability". This memorandum required that the Office of the Assistant Secretary of Defense (Health Affairs) provide a plan to the DoD Comptroller documenting initiatives for managing of information resources to achieve standardization and interoperability of AISs within the MHSS. The "Military Health Services System Automated Information Systems Standardization and Interoperability Plan" was submitted in September 1988.

In April 1989, the ASD(HA) submitted to Congress a Report on the MHSS Medical Information Systems Architecture. This report described the structure, accomplishments, and plans for the MHSS architecture program. Until October 1989, the MHSS architecture program followed the plan outlined in this report.

On October 4, 1989, The Deputy Secretary of Defense established the Corporate Information Management (CIM) initiative. CIM goals are to improve standardization, quality, and consistency of data from DoD's multiple management information systems, eliminate redundant information systems, and develop uniform and consistent information requirements and data formats within each functional area. In April 1990, the CIM Medical Functional Group began its review of the MHSS from a DoD perspective. Since its inception, the CIM Medical Functional Group has completed the Phase I vision and has begun development of the Phase II business plan of the CIM process. The CIM Medical Functional Group has also identified and obtained approval for twelve interim standard MHSS systems.

III. The MHSS Information Systems Architecture Program

As defined by the MHSS architecture program and the CIM Medical Functional Group, the AIS environment for the MHSS encompasses all information systems in the peacetime, mobilization and contingency environments involved in the collection, storage, manipulation, retrieval, reporting and dissemination of clinical, administrative and management information related to the operation and management of the MHSS. Included are interfaces with external systems such as personnel, casualty, finance, logistics, command and control, and occupational health, managed through joint programs with the responsible agencies. The Phase I analysis of the CIM Medical Functional Group confirms the scope of the MHSS AIS environment.

The MHSS information systems architecture program provides a framework within which standardization and interoperability of AISs can be achieved. Various programs-- each addressing different aspects of standardization and interoperability, and organizational mechanisms by which to implement them -- have been established for the development, implementation and monitoring of policies, guidelines and standards within their respective areas. These programs provide the tools for a cohesive information systems environment. The MHSS architecture program structure will enable MHSS to support the plans for developing and implementing the information systems plans emanating from the CIM process. MHSS experience with systems integration and standardization provides the foundation for designating DMSSC and Service elements as the executive agents to develop and implement the CIM specified applications.

Organizational mechanisms have been established to ensure coordination of the MHSS architecture program with CIM. These mechanisms include the establishment of the medical Functional Steering Committee, the assignment of senior MHSS functional staff to lead and support the CIM Medical Functional Group, and close day-to-day working relationships between OASD(HA) staff, Service Medical Department staff and the CIM Medical Functional Group. The Medical Functional Steering Committee provides review and oversight of the analyses and the products developed by the CIM Medical Functional Group. Representation on the Medical Functional Steering Committee includes: the ASD(HA), Surgeons General of the Services, ASD (Force Management and Personnel), ASD (Reserve Affairs), Office of the Comptroller, Assistant Secretary of the Navy (Manpower and Reserve Affairs), Assistant Secretary of the Air Force (Manpower, Reserve Affairs, Installations and Environment), Assistant Secretary of the Army (Manpower and Reserve Affairs), Office of the Joint Staff Medical Readiness, and Corporate Information Management.

The leadership of the CIM Medical Functional Group is well versed in the history, objectives, and detailed content of the MHSS architecture. Previous experience with the MHSS architecture program is brought to bear on detailed CIM Medical Functional Group analysis and modeling. The similarity in objectives and technical approach between the MHSS Architecture program and CIM has facilitated the institutionalization of CIM in the medical area. The CIM methodology is used to develop an information systems plan and application specifications in high priority functional areas such as Coordinated Care. The MHSS architecture program staff and the CIM Medical Functional Group leadership meet regularly to coordinate their efforts. The MHSS has embraced CIM as a new way of doing business, and is applying the CIM tools and methods to the development of the MHSS architecture, drawing on the CIM Medical Functional Group expertise to support requirements definition.

A. Program Objectives

Specific objectives to achieve standardization and interoperability of AISs within the MHSS have been identified. The MHSS Architecture program objectives defined in the "Military Health Services System Automated Information Systems Standardization and Interoperability Plan", closely parallel those specified for the CIM initiative. The common objectives of MHSS architecture and the CIM initiative are displayed in the following table.

MHSS ADP Architecture Objectives	CIM Initiative Objectives
Implementation of functional interoperability requirements policy	Review the processes and procedures used for overseeing the definition of requirements and the development of new information systems and software in DoD
Definition and prioritization of functional information requirements	Draft a management plan including a process guide for developing integrated management information systems
Standardization of AISS to meet prioritized requirements	Ensure the standardization, quality, and consistency of data from DoD's multiple management information systems
Avoidance of duplication and redundancy of AISS and AIS data	Eliminate duplication of efforts in the development of multiple information systems designed to met a single functional requirement
Reduction of the number of AISS to the absolute minimum to meet mission needs	Integrate management information systems across the department
Coordination of interoperability efforts among MHSS organizations, including the Office of the ASD(HA), the Joint Chiefs of Staff, the Military Departments and other Defense Agencies; functional areas outside the scope of the MHSS such as personnel, finance, logistics, and command and control; agencies and organizations external to the MHSS such as the Veterans Administration.	Recommend an overall approach and action plan to enhance the availability and standardization of information in common areas
Implementation of program quality management reviews of all system initiatives to ensure that interoperability requirements are being met	Review the processes and procedures used for overseeing the development of new information systems and software in DoD

B. Program Structure And Oversight

The ASD(HA) has responsibility for the planning, policy development and oversight of medical information systems within the MHSS. In support of operational policies and programs under the Corporate Information Management initiative, the ASD(HA) serves as the Chair of the Medical Functional Steering Committee. The Deputy Assistant Secretary of Defense (Health Services Operation) ((DASD(HSO))) has responsibility for all health care services provided through military medical treatment facilities and programs in support of the direct health care system. In support of the DASD(HSO), the Office of Health Policy and Information Systems (HP&IS) is responsible for overseeing the development and implementation of health management information and automation requirements and policies, and ensuring the planning and integration of health services and information management programs within the direct health care system. This office advises the DASD(HSO) and ASD(HA) on integration and architecture issues and serves as the Health Affairs liaison to the CIM program. The DASD(HSO) also exercises direction, authority, and control over the Defense Medical Systems Support Center (DMSSC). In the CIM environment, DMSSC is an Executive Agent responsible for developing and implementing the applications defined by the CIM Medical Functional Group. DMSSC's experience in developing, implementing and maintaining standardized multi-Service systems enhances the support ASD(HA) can provide to execution of the CIM initiative.

With the implementation of the CIM initiative, the ASD(HA) has looked to the CIM Medical Functional Group to facilitate documentation of the MHSS vision and the functional requirements and plans for implementing this vision. The ASD(HA) exercises functional oversight over the CIM Medical Functional Group as chair of the Medical Functional Steering Committee. The Committee is comprised of Senior officials responsible for the MHSS and includes as key members the Surgeons General of the Services. The Medical Functional Steering Committee:

- o Reviews CIM Medical Functional Group progress
- o Resolves interface, integration, and policy implementation issues raised to the Steering Committee by the CIM Medical Functional Group
- o Reviews and approves the functional Business Plan for the MHSS
- o Identifies additional functional requirements and other related issues resulting from changing policies addressed by the CIM Medical Functional Group
- o Reviews candidates for the interim standard information systems proposed by the CIM Medical Functional Group and makes recommendations for approval
- o Reviews proposed policy, legislative, and regulatory changes forwarded by the CIM Medical Functional Group and take necessary actions to implement the proposed policy changes and legislative proposals
- o Resolves, with other Steering Committees, interface and integration issues across functional groups

As functional products are developed by the CIM Medical Functional Group, they are staffed with the OASD(HA) and the Services and are submitted to the Medical Functional Steering Committee for approval. To date, the Functional Steering Committee has reviewed and approved the Phase I Vision and twelve interim standard systems.

The ASD(HA) has established similar mechanisms within Health Affairs. The Health Affairs Information Systems Review Committee is comprised of the Deputy Assistant Secretaries within Health Affairs and is chaired by the DASD(HSO). This committee has oversight for all information systems and information resources management policies, programs and issues and advises the ASD(HA) on such issues. The Health Affairs Information Systems Working Group is a working level arm of the Review Committee tasked with reviewing and providing recommendations on specific issues as they arise. The working group is currently overseeing the development of an information and applications requirements set to support Coordinated Care within the MHSS. The Health Affairs Information Systems Working Group is working closely with the CIM Medical Functional Group to ensure that requirements are appropriately defined following the CIM methodology and that the Functional Business Plan reflects Coordinated Care policies, programs and information requirements.

C. Coordination With The Military Departments

As part of his responsibilities, the ASD(HA) promotes participation and coordination among the Military Departments on all issues related to the health of the fighting forces and other beneficiaries of the MHSS. Historically, Health Affairs has been a model for coordination with the Military Departments in the development of standardized medical applications, such as Composite Health Care System (CHCS), Defense Enrollment Eligibility Reporting System (DEERS), Defense Medical Information System (DMIS) and Medical Expense and Performance Reporting System (MEPRS). Representatives of each Military Department have participated in the design, development oversight, testing and implementation of these standard applications. The initial MHSS architecture was developed with Service input and oversight by a Tri-Service review committee and is supported by Tri-Service working groups. The CIM initiative reinforces the historical MHSS approach and institutionalizes it throughout DoD. The CIM Medical Functional Group is led by a senior health systems official and is composed of senior functional experts from the Services, Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), and other DoD agencies. The CIM Medical Functional Group reviews the business practices of the MHSS in order to develop a standard functional model supporting the business and operational information requirements.

E. Program Approach

The MHSS architecture program was initiated in November 1987. By March 1989, an MHSS strategic architecture was developed and approved by the Services and Health Affairs. Using the strategic architecture as a foundation, a more detailed architecture was developed identifying detailed processes, specifying data requirements and relationships and proposing application groupings. Further refinement of the MHSS architecture will be a product of the CIM initiative. The existing MHSS architecture is used as a reference and starting point for developing products specified in the CIM methodology.

Both the MHSS architecture program and the CIM initiative apply a "top-down" methodology using the MHSS mission, goals and future vision as the foundation for determining information requirements. The CIM methodology includes three phases:

- o Phase I - Functional Vision -- Focuses entirely on the business aspects of the MHSS and develops a visionary perspective of the MHSS as it will exist approximately ten years in the future.
- o Phase II - Functional Business Plan -- Develops the business plan for evolving the current MHSS to the future vision of MHSS and prescribes the high level information requirements essential for managing the MHSS.
- o Phase III - Information Systems Strategy -- Focuses on clearly identifying the information systems requirements and develops the strategy for providing information systems support in the near term, intermediate term and longer term.

1. Information Architecture

The information architecture defines, structurally and functionally, the information processed during operation of the MHSS. An enterprise model of the MHSS was developed in Fiscal Year 1989. The enterprise model identified, defined and interrelated the missions, goals, organizations, functions, information and AIS support of the MHSS. The model was subsequently developed into a more detailed architecture which validated the preliminary strategic groupings of data and functions. Analysis of the detailed model resulted in a preliminary inventory of target MHSS applications.

With the initiation of the CIM program, the MHSS focused its architecture efforts on support of the CIM Medical Functional Group and on defining requirements for Coordinated Care. Using the CIM methodology, interim and long range plans for MHSS information resource management are being developed, with a near term solution for automated support for Coordinated Care the primary emphasis.

2. Technical Architecture

MHSS technical standards and requirements have been defined - in accordance with international, government, DoD, and industry standards - for incorporation into new system development and redesign efforts. The new Center for Information Management under the Auspices of the Defense Information Systems Agency will be developing DoD standard information technology architecture. The ASD(HA) will support the DoD standard technology architecture by ensuring that the MHSS technical architecture complies with the DoD standards while specifying the requirements of the DoD medical community.

3. Data Administration

The Medical Data Administration Program is responsible for managing the collection, storage, and identification of medical data. The objectives of this program are to improve interoperability among information systems (manual and automated) and facilitate data exchange, to reduce the time required to transform, translate or look up the meaning of differently named but otherwise identical data.

As the Medical component of the DoD-wide program to standardize data elements, OASD(HA) develops and manages the medical portion of the program by developing policy and procedures and setting priorities for data element standardization. The DoD Medical Information Standards Committee is responsible for recommending standard data elements, codes and values submitted for approval. This committee is comprised of representatives of the Service Surgeons General, OASD(HA) components, and the DoD Medical Data Administrator.

The Data Administration program is supported by a set of automated tools. The current tool set consists of the Defense Medical Data Dictionary, the Data Element Standardization Support Tool, and the Data Administration Registration system. These tools are the vehicle to provide information about medical data to the DoD community. The data elements of approximately 40 MHSS systems including the twelve CIM interim standard systems are currently inventoried in the Defense Medical Data Dictionary.

The Data Administration program is undertaking the following initiatives:

- o Expanding the number of systems represented in the Medical Data Dictionary
- o Assessing the source, validity, and redundancy of all medical data
- o Modifying the Medical Data Dictionary to comply with the Information Resources Dictionary Standard established in Federal Information Processing Standard 156.

The MHSS Data Administration program contributes to the overall DoD Data Administration program through coordination with the CIM Medical Functional Group. The participation of the OASD(HA) in the DoD data standardization program to ensure incorporation of all medical requirements into the DoD nomenclature.

4. Telecommunications

In support of health care automation, DMSSC manages, operates, and maintains a wide area data communications network (DMSSC*NET). The mission of DMSSC*NET is to provide reliable data communications services to the users of the health care automation systems. These services facilitate user access to medical data and applications as well as allow data sharing among a number of distributed information processing systems.

The foundation of the current DMSSC*NET was placed in service in 1983 as the Defense Enrollment Eligibility Reporting System (DEERS) wide area network. The early network was implemented specifically to provide interactive access to DEERS applications and to data supporting medical benefit enrollment and eligibility verification for military personnel and their dependents. Over time, additional information requirements were defined, and the network was expanded to serve new users and locations. Additionally, new information processing systems and applications, such as Medical Expense and Performance Reporting System (MEPRS), the Automated Quality of Care Evaluations Support System (AQCESS), and the Defense Medical Regulating Information System (DMRIS), were developed and deployed.

DMSSC*NET currently supports over 1,200 customers located in the United States, including Alaska and Hawaii; in Bermuda, Cuba, and Puerto Rico in the Caribbean; and abroad, in Spain and Germany. The network is being upgraded to one that will be both less expensive, more responsive, and provide a migration path to newer communications technologies.

5. Total Quality Management

In September 1989, The Director of the Defense Medical Systems Support Center (DMSSC) initiated the development and implementation of a Total Quality Management (TQM) program, applicable to all functions in DMSSC. The goal of TQM is to ensure the all DMSSC products and services support user needs and mission accomplishment by meeting clearly defined requirements. The DMSSC TQM program specifically intends to increase the productivity of DMSSC through improvements in the quality of products and services. A Quality Management (QM) Office has been established and is responsible for carrying out the directive by developing and implementing DMSSC's TQM program.

Through independent quality assessments starting as early as possible in the system life-cycle, the TQM program will improve productivity by decreasing revision and redevelopment of system products. The TQM program has five objectives:

- o Identify DMSSC intermediate products and corresponding processes that significantly influence the quality of AIS end-products
- o Establish baseline evaluation criteria by collection all of the associated requirements
- o Document and analyze the production process
- o Define documentation standards for specification of requirements and production processes
- o Perform reviews of products and processes

The TQM program is being implemented incrementally. Products are selected for review based on two criteria: importance and how well requirements are defined. The priority for review of functions is based on an assessment of projected near-term benefits.

IV. The MHSS Environment Today

The CIM initiative has provided the MHSS with a DoD-wide foundation for the further development of the MHSS architecture. The OASD(HA) is actively involved in developing and validating the CIM Medical Functional Group products. The MHSS architecture will be integrated into the overall DoD architecture through coordination with the Office of the Director of Defense Information and the Deputy Assistant Secretary of Defense for Information Systems, both under the direction of the ASD(C3I). MHSS system development efforts will reflect the CIM plans and comply with the defined DoD standards. Within the MHSS, DMSSC will serve as the principal Executive Agent in support of application development, testing and deployment.

A. Corporate Information Management Initiatives

In April 1990 the CIM Medical Functional Group was established. In response to current priority MHSS issues, the CIM Medical Functional Group created the following subgroups:

- o Coordinated Care
- o Blood Program Management
- o Medical Logistics
- o Dental Services
- o Theater Systems

A core team on the CIM Medical Functional Group develops an overall MHSS view focusing on overall health care operation with an emphasis on Coordinated Care. The subgroups then develop detailed views of their areas in the context of the overall model, adhering to the CIM methodology and produce CIM-specified products.

1. Coordinated Care

In June 1990 the ASD(HA) established the Coordinated Care Program focusing on patient management at the local level where health care can best be influenced. The objectives of the Coordinated Care Program are to manage the utilization of health care, coordinate its supply among the various sources of care and make use of the full capacity of military treatment facilities thereby helping to contain CHAMPUS costs. Coordinated Care will be implemented through the following action steps:

- o Integration of health care services by closer coordination among the Services, CHAMPUS and alternative civilian provider networks.
- o The establishment of networks of efficient civilian doctors and hospitals of proven quality with risk sharing as a means of cost containment.
- o Beneficiary enrollment in the coordinated care program.
- o Requiring that all providers ensure that quality care is provided in the correct setting.
- o Future resource allocation incentives to encourage provision of care within MTFs, and to collect third-party reimbursements for any enrollees who have other insurance coverage.
- o Providing MTF commanding officers with responsibility for ensuring that care is available throughout their network and that the level of care is appropriate.
- o Implementation of utilization review and prior authorization for CHAMPUS mental health services.

- o Establishment of standards to assess effectiveness and efficiency in delivering health care that focus on cost, quality, and access.
- o Patient and provider education on managed care, health lifestyles, and appropriate use of health resources.

Successful implementation of Coordinated Care requires enhanced data systems providing standardized data on quality of care, cost, manpower and workload for military and civilian care resources to hospital clinicians as well as to medical managers at all levels. These enhanced data systems will afford the MTF commander the ability to pursue reimbursement from third-party payors based on the care provided rather than the current standard reimbursement rate.

Military health care management expertise, as well as knowledge of civilian health care practices, is being drawn upon to determine the information and automation requirements for Coordinated Care. Coordinated Care requirements will be integrated into the overall CIM Medical Functional Business Plan and Information Systems Plan.

Using the baseline architecture as a starting point, data and functional process models are being enhanced, validated and consolidated into a comprehensive set of requirements to support Coordinated Care. These requirements are being defined through three major activities: Developing consolidated data and functional models; inventorying, analyzing and modeling existing systems; and defining a migration plan for the MHSS systems. These steps will be completed during 1991. Based on the migration strategy, ASD(HA) will direct implementation of near-term and long-term integration solutions and action plans. The implemented solutions will comply with CIM standards.

2. Medical Logistics

Medical logistics is used to support the delivery of health care to patients during peacetime and wartime through the timely provision of supplies, equipment, and services. The scope of medical logistics includes: management of materiel and services at the base level; operation of a centrally managed depot system; and proper use and control of costs for materiel.

Several medical logistics systems are under consideration as interim standard systems. Candidates include: Central Processing and Distribution system (CPD), Air Force MEDLOG, Biomedical Equipment and Facilities Systems (BIOFACS/Navy), Property Management and Budgeting System (PMBS/Navy), TAMMIS-MEDLOG, and Army Medical Department Property Accounting System (AMEDDPAS). Recommendations regarding these systems will be made as Medical Logistics requirements are further developed.

In addition to the Medical Logistics Sub-Group, the CIM initiative includes a Materiel Management Functional Group. The CIM Medical Functional Group in coordination with the Materiel Management Functional Group will define medical logistics requirements for integration into the overall logistics requirements. The CIM integration activities will align the models of these two groups into a single representation of logistics incorporating MHSS requirements.

3. Theater

Medical theater requirements encompass operational planning, mobilization planning, exercise and evaluation activities, and the MHSS role during war and contingencies. Theater functions include: preparing medical estimates and medical support appendices to operational plans; identifying and deploying the resources necessary for adequate medical support; preparing and using medical intelligence pursuant to operations; and exercising and testing readiness capabilities.

Two theater systems have been approved as interim standard systems -- Theater Army Medical Management Information System (TAMMIS) and Automated Patient Evacuation System (APES). TAMMIS supports information management requirements of Army field medical units. The Military Departments have concluded that TAMMIS can serve as the functional baseline for a theater automated information system consistent with the interface requirements identified in the Joint Requirements Oversight Council (JROC) approved mission needs statement.

APES supports the mission of the Military Airlift Command in the movement of patients between military Medical Treatment Facilities within the continental United States, within the European and Pacific theaters, and from the overseas theaters to the continental United States.

4. Dental

Dental services encompass all aspects of MHSS dental activities. Dental functions include readiness, forensic, consultation, prosthetic, health maintenance, prevention, quality assurance, research, training, finance, and policies.

Several dental support systems are under consideration as interim standard medical systems. Current systems to be evaluated include the Dental Workload Reporting System (DWRS/Army), Dental Management Information System (DENMIS/Navy), and the Dental Data System (DSS/USAF). Recommendations regarding these systems will be made as Medical Dental requirements are further developed.

5. Blood

Blood management encompasses the acquisition, storage and issuance of blood components. Blood functions include the following activities related to blood components and substitutes: Collection, procurement, freezing, storage, distribution, operations management, inventory control, research, pre-transfusion testing, and issuance.

The Defense Blood Management Information System (DBMIS) has been designated as an interim standard system. DBMIS supports management of quality blood products throughout the Department. Further efforts to define the total set of blood management requirements will lead to a standard blood system, building upon DBMIS as a baseline, to achieve a CIM "vision" system.

6. Manpower and Personnel

The MHSS provides appropriate qualified human resources to support all health-related activities. Portions of overall DoD manpower requirements are being modeled by the CIM Functional Groups for Civilian Human Resources and Civilian Payroll. The CIM Medical Functional Group will work with the Human Resources Functional Group to define medical specific requirements and incorporate them into the overall human resources requirements set and systems solutions. The CIM integration activities will align the models of these groups into a single representation of human resource requirements incorporating MHSS requirements.

7. Financial Management Systems

Financial management support of the MHSS is provided through timely and accurate financial guidance, management, and control. This is accomplished through financial resource planning, budget preparation, budget submission, and budget review based on medical mission priorities. In addition, budget execution provides the MHSS with necessary financial resource accounting and internal review capabilities.

The Expense Assignment System, Version 3 (EAS III) has been approved as an interim standard medical system. EAS III supports the collection, assignment, and upward reporting of medical expenses in support of DoD Directive 6010.13, Medical Expense and Performance Reporting System (MEPRS) for Fixed Military Medical and Dental Treatment Facilities. EAS III replaces EAS II and is designed to meet new DoD MEPRS reporting requirements scheduled for FY'93.

The ASD(HA) is working with the DoD Comptroller to develop unit cost measures of health care output and to determine the total cost of health care. A standardized medical work unit combining inpatient and outpatient workload has been defined for Medical Treatment Facilities (MTFs). A comparable CHAMPUS work unit is under development. ASD(HA) is working with the Office of the Comptroller to identify and obtain data from DoD financial systems to support cost analysis across all MHSS health care delivery operations.

Portions of overall DoD financial requirements are being modeled by the CIM Financial Operations Functional Group. The CIM Medical Functional Group, in coordination with the Financial Operations Functional Group will work to define medical specific Financial Management requirements for incorporation into the total requirements set. The CIM integration activities will align the models of these groups into a single representation of financial management requirements incorporating MHSS requirements.

B. Current Medical Information System Initiatives

Priorities for MHSS Medical information system initiatives are reflected in the priority areas under development by the CIM Medical Functional Group and the approved interim standard systems.

1. Standard Systems

The ASD(HA), supported by the CIM Medical Functional Group, is specifying standard system requirements in the following priority areas: Coordinated Care, Theater Management, Medical Logistics, Blood Management, and Dental Management. The requirements developed by the CIM Medical Functional Group for these areas will become the basis for application development by the Executive Agent.

While these new standard systems are being modeled, interim standard systems are designated for use throughout the MHSS. Once a system has been selected, any competing system development/modernization will be suspended, and planning for any required near-term modifications and deployment of the selected system will be accomplished by an Executive Agent designated for the system. Applying the evaluation guidelines issued by CIM, the CIM Medical Functional Group nominated twelve interim standard systems. The following have been approved and designated as CIM interim standard systems:

- o Composite Health Care System (CHCS)
- o Automated Quality of Care Evaluation Support System (AQCESS)
- o Medical Expense and Performance Reporting System, Expense Assignment System, Version 3 (MEPRS/EAS III)
- o Tri-Service Food Service System (TRIFOOD)
- o Defense Medical Regulating Information System (DMRIS)
- o Defense Blood Management Information System (DBMIS)
- o Shipboard Nontactical ADP Program (SNAP) Automated Medical System (SAMS)
- o Tri-Service Micro Pharmacy System (TMPS)
- o Computer Assisted Processing of Cardiograms (CAPOC)
- o Veterinary Services Automated Data Management System (VSADMS)
- o Theater Army Medical Management Information (TAMMIS)
- o Automated Patient Evacuation System (APES)

The consideration of the Defense Eligibility Enrollment System (DEERS) was deferred pending review by CIM Functional Groups within the Human Resources, Reserve, and Finance functional areas.

A number of other systems will be further evaluated as directed by the Medical Functional Steering Committee and as the CIM Medical Functional Group gathers sufficient system data and gains a more complete understanding of the current business practices of the MHSS and its information support requirements during Phase II of the CIM process. The systems nominated by the CIM Medical Functional Group were reviewed and approved by the Medical Functional Steering Committee and the ASD (Command, Control, Communications and Intelligence). They are now designated as approved interim standard DoD systems.

2. Interfaces to External Systems

The standard AISs supporting MHSS requirements must interface to external systems. The CIM Medical Functional Group will identify the MHSS external interface requirements by integrating the MHSS model with those developed by other CIM functional groups. Through integration, MHSS functions and data requirements common to other functional areas will be identified. The integration analysis will result in standardized process descriptions, data

definitions, interface methods, and applications. The comprehensive scope of the CIM Medical Functional Group modeling effort ensures that the MHSS requirements falling within the domain of other functional areas will be specified and incorporated into the overall model. As the CIM integration effort establishes standardized processes, data, interfaces, and applications, these will be incorporated into the MHSS architecture.

V. The Plan For The Future

The goal of the MHSS architecture program is to achieve standardization and interoperability of AISs as a means of optimizing the use of information resources. The CIM initiative furthers this goal by providing an overall DoD context for implementing the MHSS architecture. Future MHSS architecture development and implementation include:

- o Coordinated Care -- Development and implementation of AIS support for coordinated care will be a primary focus of MHSS architecture and implementation. During 1991 the ASD(HA), with the support of the CIM Medical Functional Group, will specify a comprehensive set of requirements and a preliminary migration plan for AIS support for the Coordinated Care Program. The migration plan will specify data requirements, process models, assessment of current applications, and a functional business plan. Included in the coordinated care requirements will be a plan for integrating direct care and CHAMPUS data. Following approval by the Medical Functional Steering Committee, implementation of the Coordinated Care migration strategy will begin. If appropriate, interim standard systems will be recommended as interim solutions, building on existing MHSS applications now available. New application development will begin once the requirements set and migration plan have been approved.
- o Apply CIM process methodology to MHSS AIS development -- The CIM Medical Functional Group will continue to be a key player in the development of standard MHSS AIS applications. The ASD(HA) will rely on the broad expertise represented in the CIM Medical Functional Group to support the development of application requirements and to ensure that systems meet the functional specifications. The CIM methodology will guide the overall development of MHSS functional specifications and system migration planning.
- o Establish effective Executive Agent support -- DMSSC and the Service Components provide a *strong foundation of system development, implementation and maintenance expertise*. MHSS will draw on these organizations to designate the most effective Executive Agent for specific applications.
- o Integrate MHSS requirements with other functional areas -- Support for MHSS requirements in areas such as finance, human resources and materiel management require data and application sharing with other functional areas. Through the CIM integration process, MHSS requirements will be incorporated into the plans developed by other functional areas. This process will minimize inconsistencies and duplication between the CIM Medical Functional Group and other functional areas.

In the future the MHSS architecture and AIS environment will benefit from the existence of DoD-wide standards and methods for planning and implementing systems. Application of the CIM methodology will provide a consistent framework for defining processes and data across all DoD functional areas. The policy of system standardization will further the MHSS efforts to support the medical requirements of all Service Components. Standardizing data and applications will facilitate information-sharing among functional areas and will enable the MHSS to draw on non-medical applications.